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REMARKS

In an Office Action mailed August 9, 2005, the Examiner repeated the rejections previously stated in the prior Office Action. Applicants note that the Office Action did not narrow the issues addressed by Applicant in their Response at all. Applicants address here various aspects of the Examiner's response to Applicants' arguments in hopes that a thorough review will save both Applicants and the Examiner time and money.

1. Claims 2-7 and 9 were rejected under 35 U.S.C. 112, first paragraph. The application states in paragraph **[0033]**:

> "Complex RF modeling with a computer-aided-design (CAD) modeling program were used to estimate the actual input-to-output isolation. However the techniques discussed above, including placement in different quadrants, maintaining minimum distances, interposing multiple signal pins, and interposing power and/or ground pins contributed to providing sufficient input-to-output isolation."

Yet the Examiner stated: "Applicant (sic) has failed to provide sufficient support in order to enable someone with ordinary skill to correlate the predetermined distance between the first and second terminal pairs to the attenuation in a stop-band of the first external filter". Thus the Examiner is apparently taking the position that one of ordinary skill in the art does not know how to use CAD techniques to perform complex RF modeling. Applicants disagree.

Applicants note that design engineers routinely use CAD techniques in integrated circuit modeling and design, and have done so for many years. Note that even after performing a casual search Applicants have found the following references to the use of CAD techniques just among the references that Applicants have cited:

a) The article by Campbell entitled "Understanding Surface Acoustic Wave (SAW) Devices for Mobile and Wireless Applications and Design Techniques" cites the following article on page 2 thereof: W. R. Smith, "Basics of the SAW interdigital transducer," in J. H. Collins and L. Masotti (eds.) *Computer-Aided Design of Surface Acoustic Wave Devices*. Elsevier: New York, 1976.

b) The article by Campbell states on page 17 thereof: "For detailed computer-aided design techniques for these slanted-finger structures see: H. Yatsuda, 'Automatic computer-aided design of SAW filters using slanted finger interdigital transducers,' *IEEE Transactions Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 47, pp. 140-147, January 2000."

c) U.S. Patent No. 6,525,609 cites the following article as a non-patent reference on the front cover: Long et al, "The Modeling, Characterization, and Design of Monolithic Inductors for Silicon RF IC's," IEEE Journal of Solid-State Circuits, vol. 32, No. 3, Mar. 1997, pp. 357-369.

d) U.S. Patent No. 6,525,609 states at col. 47, line 61-col. 48, line 13: "FIG. 37 is a simplified diagram showing the connection 3702 of multiple attenuator sections 3602 to the output 3604 . . . The combined or average attenuation at the output terminal can be calculated mathematically or, it can be determined using circuit simulation techniques available in computer analysis programs."

Applicants submit that use of CAD modeling is quite well known and request the withdrawal of this ground of rejection.

2. The Examiner again rejected claim 2 under 35 U.S.C. § 112, second paragraph, for lack of antecedent basis for the phrase "said first predetermined amount" in claim 2, line 1. Applicants previously noted that "said first predetermined amount" has its antecedent in claim 1, line 12 that *literally* recites "a first predetermined amount". The Examiner somehow remains unconvinced.

The Examiner stated:

> "[C]laim 2 contains inconsistent language is inconsistent (sic), since Claim 2 discloses 'a first predetermined amount' when describing the separation between the first and second terminal pairs. However claim 1 from which claim 2 depends from discloses a 'first predetermined distance'. The terms 'amount' and 'distance' are clearly different and thus claim 2 is unclear. Thereby, the 112 2nd rejection of claim 2 is also maintained."

The Examiner is incorrect that the simultaneous recitation of "a first predetermined amount" and "a first predetermined distance" in claims 1 and 2 renders them indefinite. This relationship is clearly described in paragraph [0027]. For a given *distance* between the pairs of pins (predetermined during the design of the integrated circuit), the isolation will be maintained at a predetermined *amount*, –70 dB in the example in the application. The amount of isolation is predetermined by the distance between the pin pairs and other physical factors that affect pin-to-pin coupling that can be determined by an engineer performing complex RF modeling with a CAD modeling program on the first and second terminal pairs.

3. Claims 1-29 were rejected under 35 U.S.C. § 103(a) over Poulin (US Patent No. 6,580,163) in view of Williams (US Patent No. 3,868,608). The Examiner has clearly failed to meet his burden of establishing a *prima facie* case of obviousness, which requires the proposed combination to include all the elements of the rejected claims. See M.P.E.P. 2142.

Applicants disagree with the Examiner that one of ordinary skill in the art would be motivated to combine Williams with Poulin in any way since their purposes are so different and they are unrelated to the purposes described in the present application. This point was fully developed in the prior response but has apparently failed to convince the Examiner. Applicants maintain this lack of motivation overcomes the 103(a) rejection in its own right.

However let us assume for the sake of argument that Williams could be combined with Poulin. Such a combination does not even include all the elements and limitations of the claims, and in fact the proposed combination results in at least three remaining differences with claim 1, for example.

Hooking up Williams SAW filter 16 to Poulin's integrated circuit 200 would require Poulin's integrated circuit to have only one output pin, since Williams' SAW filter has one input terminal 14 and a second, grounded input terminal 18. Claim 1 however recites "a semiconductor substrate having a first pair of bonding pads conducting a differential output signal thereon and adapted to be coupled to an input of a first external filter". This is a first remaining difference.

Ignoring the first remaining difference, Williams SAW filter 16 has two outputs 20 and 22, but nothing in Poulin or Williams suggests connecting outputs 20 and 22 back to corresponding inputs of Poulin's integrated circuit 200. Claim 1 however recites a semiconductor substrate that has in combination "a first pair of bonding pads conducting a differential output signal thereon and adapted to be coupled to an input of a first external filter" and "a second pair of bonding pads conducting a differential input signal thereon and adapted to be coupled to an output of *said first external filter*" (emphasis added). This is a second remaining difference.

Ignoring both the first and second remaining differences, neither Williams nor Poulin discloses or suggests where the input and output terminals to and from Williams' SAW filter 16 should be placed on Poulin's integrated circuit 200. Claim 1 recites "wherein said first and second terminal pairs are separated by a first predetermined distance sufficient to maintain an input-to-output isolation therebetween of at least a first predetermined amount". This is a third remaining difference.

None of these three remaining differences are shown, suggested, alluded to, or even hinted about in either Poulin or Williams. Applicants can discern no basis for the Examiner filling in the gaps, other than that he is now aware of the teachings of Applicants' own specification and he desires to reject the claims. This type of *post hoc* analysis is clearly improper.

Applicants do not specifically address the rejections of the remaining claims but note that all the reasons stated in the prior Response dated May 26, 2005 remain.

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CONCLUSION

Applicants believe that an independent review by others within the U.S. Patent Office would support Applicants' position. Applicants again respectfully submit that the present application is in condition for allowance.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

10/14/05
Date

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